IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A transport stream recording apparatus for recording a transport stream on a recording medium, comprising:

a detector configured to detect, from a transport packet constituting said transport stream, a system time clock (STC) discontinuity point in said transport stream;

a generator configured to generate STC sequence information indicative of the sequence of transport packets that includes no STC discontinuity in accordance with said STC discontinuity point, wherein said STC sequence information includes information defining a time axis of an STC sequence and information corresponding to a start point and an end point of said time axis; and

a recording unit configured to record said transport packet onto said recording medium along with said STC sequence information.

Claim 2 (Previously Presented): A transport stream recording apparatus according to claim 1, wherein said detector comprises:

a first extracting block configured to extract reference time information located in said transport stream;

a time information generator configured to generate system time information on the basis of said reference time information; and

a time discontinuity detector configured to detect occurrence of discontinuity in said reference time information.

Claims 3-4 (Canceled).

Claim 5 (Currently Amended): A transport stream recording apparatus according to claim [[3]] 1, wherein said generator generates, as said ~~time-axis identification~~ STC sequence information, ~~said system time information corresponding to a display~~ presentation start time on said time axis and ~~said system time information corresponding to a display~~ presentation end time on said time axis.

Claim 6 (Original): A transport stream recording apparatus according to claim 2, wherein said reference time information is a program clock reference and said system time information is a system time clock.

Claims 7-9 (Canceled).

Claim 10 (Previously Presented): A transport stream recording apparatus according to claim 1 further comprising:

a first analyzer configured to extract, from said transport packets, a transport packet including data that may provide a reproduction start position; and

an entry point map generator configured to generate an entry point map for identifying said transport packet including said data;

wherein said recording unit records, along with said STC sequence information, said entry point map on said recording medium as said database corresponding to said transport stream.

Claim 11 (Previously Presented): A transport stream recording apparatus according to claim 10, wherein said first analyzer extracts a transport packet including I picture data as

said transport packet including said data that may provide said reproduction start position; and

said entry point map generator generates said entry point map by use of positional information of said transport packet including said I picture data and time information of said I picture.

Claim 12 (Previously Presented): A transport stream recording apparatus according to claim 1 further comprising:

a second analyzer configured to extract a transport packet including data that provide a mark point from said transport packets; and

a mark point information generator configured to generate mark point information for identifying said transport packet including said data that provide said mark point;

wherein said recording unit records said mark point information on said recording medium as said database corresponding to said transport stream along with said STC sequence information.

Claim 13 (Original): A transport stream recording apparatus according to claim 12, wherein said mark point information generator generates said mark point information by use of time information of said mark point and time axis identification information for identifying a time axis to which said time information belongs.

Claim 14 (Original): A transport stream recording apparatus according to claim 13, wherein said time information is a presentation time stamp.

Claim 15 (Currently Amended): A method of recording a transport stream comprising the steps of:

detecting, from a transport packet constituting said transport stream, a system time clock (STC) discontinuity point in said transport stream;

generating STC sequence information indicative of the sequence of transport packets that includes no STC discontinuity in accordance with said STC discontinuity, wherein said STC sequence information includes information defining a time axis of an STC sequence and information corresponding to a start point and an end point of said time axis; and

recording said transport packet onto said recording medium along with said STC sequence information.

Claim 16 (Previously Presented): A method of recording a transport stream according to claim 15, wherein said detecting step comprises:

extracting reference time information located in said transport stream;

generating system time information on the basis of said reference time information; and

detecting occurrence of discontinuity in said reference time information.

Claims 17-18 (Canceled).

Claim 19 (Currently Amended): A method of recording a transport stream according to [[17]] 15, wherein said STC sequence information generating step further comprises:

generating, as said ~~time axis identification~~ STC sequence information, ~~said system time information corresponding to a display~~ presentation start time on said time axis and ~~said system time information corresponding to a display~~ presentation end time on said time axis.

Claim 20 (Previously Presented): A method of recording a transport stream according to claim 16, wherein said reference time information is a program clock reference and said system time information is a system time clock.

Claims 21-23 (Canceled).

Claim 24 (Previously Presented): A method of recording a transport stream according to claim 15, further comprising the steps of:

extracting, from said transport packets, a transport packet including data that may provide a reproduction start position; and

generating an entry point map for identifying said transport packet including said data;

wherein said recording step records, along with said STC sequence information, said entry point map on said recording medium as a database corresponding to said transport stream.

Claim 25 (Previously Presented): A method of recording a transport stream according to claim 24, wherein said extracting step comprises:

extracting a transport packet including I picture data as said transport packet including said data that may provide said reproduction start position; and

generating said entry point map by use of positional information of said transport packet including said I picture data and time information of said I picture.

Claim 26 (Previously Presented): A method of recording a transport stream according to claim 15, further comprising the steps of:

extracting a transport packet including data that provide a mark point from said transport packets; and

generating mark point information for identifying said transport packet including said data that provide said mark point;

wherein said recording step records said mark point information on said recording medium as said database corresponding to said transport stream along with said STC sequence information.

Claim 27 (Previously Presented): A method of recording a transport stream according to claim 26, wherein said mark point information generating step comprises:

generating said mark point information by use of time information of said mark point and time axis identification information for identifying a time axis corresponding to said time information.

Claim 28 (Previously Presented): A method of recording a transport stream according to claim 27, wherein said time information is a presentation time stamp.

Claims 29-42 (Canceled).

Claim 43 (Currently Amended): A transport stream reproducing apparatus for reproducing a transport stream recorded on a recording medium, comprising:

a reproducing unit configured to reproduce said transport stream and system time clock (STC) sequence information from said recording medium[;], said transport stream

including a sequence of transport packets, and said STC sequence information indicating the sequence of transport packets that includes no STC discontinuity, wherein said STC sequence information includes information defining a time axis of an STC sequence and information corresponding to a start point and an end point of said time axis; and

a controller configured to control reproduction position on the basis of the STC sequence information and desired access point.

Claim 44 (Currently Amended): A method of reproducing a transport stream recorded on a recording medium, comprising:

reproducing said transport stream and system time clock (STC) sequence information from said recording medium; said transport stream including a sequence of transport packets; said STC sequence information indicating the sequence of transport packets that includes no STC discontinuity, wherein said STC sequence information includes information defining a time axis of an STC sequence and information corresponding to a start point and an end point of said time axis; and

controlling reproduction position on the basis of the STC sequence information and desired access point.

Claim 45 (Canceled).

Claim 46 (Currently Amended): A transport stream recording apparatus comprising:

an input unit in which a transport stream is inputted;

a generator for generating reproduction management information in a unit of an interval in which a program clock reference packet identifier (PCR_PID) value in said transport stream does not change, wherein said management information includes an STC

sequence defined by a time axis having a start point and an end point and said management information further includes information corresponding to said start point and said end point; and

a recording unit for recording said reproduction management information along with said transport stream.

Claim 47 (Previously Presented): A transport stream recording apparatus according to claim 46, wherein said generator comprises:

an analyzer operative to extract information identifying PCR_PID.

Claim 48 (Previously Presented): A transport stream recording apparatus according to claim 46, wherein said generator comprises:

an analyzer operative to extract the number of video elementary streams included in said unit interval.

Claim 49 (Previously Presented): A transport stream recording apparatus according to claim 46, wherein said generator comprises:

an analyzer operative to extract the number of audio elementary streams included in said unit interval.

Claim 50 (Previously Presented): A transport stream recording apparatus according to 46, wherein said generator comprises:

an analyzer operative to extract a packet identifier of each video stream included in said unit interval.

Claim 51 (Previously Presented): A transport stream recording apparatus according to claim 46, wherein said generator comprises:

an analyzer operative to extract information for identifying a packet identifier of each audio stream included in said unit interval.

Claim 52 (Previously Presented): A transport stream recording apparatus according to claim 46, wherein said generator comprises:

an analyzer operative to extract coding attribute information of each video stream included in said unit interval.

Claim 53 (Previously Presented): A transport stream recording apparatus according to claim 46, wherein said generator comprises:

an analyzer operative to extract coding attribute information of each audio stream included in said unit interval.

Claim 54 (Currently Amended): A method of recording a transport stream comprising the steps of:

generating reproduction management information in each unit of an interval in which a program clock reference packet identifier (PCR_PID) value in an inputted transport stream does not change, wherein said management information includes an STC sequence defined by a time axis having a start point and an end point and said management information further includes information corresponding to said start point and said end point; and

recording said reproduction management information along with said transport stream.

Claim 55 (Currently Amended): A computer readable carrier including computer program instructions that cause a computer to implement a method of recording a transport stream on a recording medium, said program comprising the steps of:

generating reproduction management information in each unit of an interval in which a program clock reference packet identifier (PCR_PID) value in an inputted transport stream does not change, wherein said management information includes an STC sequence defined by a time axis having a start point and an end point and said management information further includes information corresponding to said start point and said end point; and

recording said reproduction management information along with said transport stream.

Claim 56 (Previously Presented): A computer readable carrier according to claim 55, wherein reproduction management information is recorded in each unit of an interval in which a PCR_PID value in said transport stream does not change.

Claim 57 (Currently Amended): A computer program product including a computer readable medium having stored thereon computer executable instructions for recording a transport stream, when executed, said computer readable instructions performing steps, comprising:

detecting, from a transport packet constituting said transport stream, a system time clock (STC) discontinuity point in said transport stream;

generating STC sequence information indicative of the sequence of transport packets that includes no STC continuity in accordance with said STC discontinuity point, wherein said STC sequence information includes information defining a time axis of an STC sequence and information corresponding to a start point and an end point of said time axis; and

recording said transport packet onto said recording medium along with said STC sequence information.

Claim 58 (Previously Presented): The computer program product according to claim 57, wherein said detecting step comprises:

extracting reference time information located in said transport stream;

generating system time information on the basis of said reference time information; and

detecting the occurrence of discontinuity in said reference time information.

Claims 59-60 (Canceled).

Claim 61 (Currently Amended): The computer program product according to claim [[59]] 58, wherein said generating step generates, as said time axis identification information, said system time information corresponding to a display start time on said time axis and said system time information corresponding to a display end time on said time axis.

Claim 62 (Previously Presented): The computer program product according to claim 58, wherein said reference time information is a program clock reference and said system time information is a system time clock.

Claim 63 (Previously Presented): The computer program product according to claim 57, further comprising the steps of:

extracting, from said transport packets, a transport packet including data that may provide a reproduction start position; and

generating an entry point map for identifying said transport packet including said data;

recording, along with said STC sequence information, said entry point map on said recording medium as said database corresponding to said transport stream.

Claim 64 (Previously Presented): The computer program product according to claim 63, further comprising the steps of:

extracting a transport packet including I picture data as said transport packet including said data that may provide said reproduction start position; and

generating said entry point map by use of positional information of said transport packet including said I picture data and time information of said I picture.

Claim 65 (Previously Presented): The computer program product according to claim 57, further comprising the steps of:

extracting a transport packet including data that provides a mark point from said transport packets; and

generating mark point information for identifying said transport packet including said data that provide said mark point;

recording said mark point information as said database corresponding to said transport stream along with said STC sequence information.

Claim 66 (Previously Presented): A method of recording a transport stream according to claim 65, wherein said mark point information generating step comprises:

generating said mark point information by use of time information of said mark point and time axis identification information for identifying a time axis corresponding to said time information.

Claim 67 (Previously Presented): The computer program product according to claim 66, wherein said time information is a presentation time stamp.

Claim 68 (Currently Amended): A computer program product including a computer readable medium having stored thereon computer executable instructions for reproducing a transport stream, when executed, said computer readable instructions performing steps, comprising:

reproducing said transport stream and system time clock (STC) sequence information from said recording medium, said transport stream including a sequence of transport packets, and said STC sequence information indicating the sequence of transport packets that includes no STC discontinuity, wherein said STC sequence information includes information defining a time axis of an STC sequence and information corresponding to a start point and an end point of said time axis; and

controlling reproduction position on the basis of the STC sequence information and desired access point.

Claim 69 (Previously Presented): The computer program product of claim 68, further comprising the steps of:

generating reproduction management information in a unit of an interval in which a program clock reference packet identifier (PCR_PID) value in said transport stream does not change; and

a recording unit for recording said reproduction management information along with said transport stream.

Claim 70 (Currently Amended): A computer readable recording medium for recording transport packet information and STC sequence information, comprising:

a stream database configured to store said STC sequence information, said STC sequence information indicative of the sequence of transport packets that includes no STC discontinuity in accordance with a STC discontinuity point detected in said transport stream, wherein said STC sequence information includes information defining a time axis of an STC sequence and information corresponding to a start point and an end point of said time axis,

wherein said stream database is accessed by a reproducing device which controls a reproduction position on the basis of the STC sequence information and a desired access point.

Claims 71-72 (Canceled).

Claim 73 (Currently Amended): The computer readable recording medium according to Claim [[71]] 70, wherein said time axis identification information comprises said system time information corresponding to a display start time on said time axis and said system time information corresponding to a display end time on said time axis.